

FINNISH SCIENTISTS DISCOVER ARTIFICIAL GRAVITY

by Martin Gottschall ©1997

Information about this discovery has come to us from two sources. The November 1996 issue of the Australian International UFO-Flying Saucer Research, Inc. Newsletter carries an article on page 15 which appears to have been taken straight from *Skywatch*, 8 September 1996, and is entitled "Antigravity from Finland". The other source is an article that appeared in the *Sunday Telegraph* (UK) on 1 September 1996 (page 3), obtained off the Internet by our treasurer, Lee Earle.

To all appearances, this is a genuine report of an anomalous discovery with stupendous implications, and will be treated as such in this article. From what we know about the UFO cover-up and, in particular, the secrecy over advanced technology, this may well be all we will hear about this discovery if it is absolutely genuine and real. So we might as well make the best of what we have now, rather than wait for more.

It is apparent that the *Skywatch* article is itself based on the *Sunday Telegraph* article, or that both share a common source, because the wording is virtually identical. I reproduce here all the wording which describes the discovery, but leave out most of the paragraphs or sentences which speculate on the possible significance and application of this discovery. We know its significance well enough.

THE REPORT

"Scientists in Finland are about to reveal details of the world's first anti-gravity device. Measuring about 12 inches across, the device is said to reduce significantly the weight of anything suspended over it.

"The claim—which has been rigorously examined by scientists, and is due to appear in a physics journal next month—could spark a technology revolution...

"The *Sunday Telegraph* has learned that NASA, the American space agency, is taking the claims seriously and is funding research into how the anti-gravity effect could be turned into a means of flight.

"The researchers at the Tampere

University of Technology in Finland, who discovered the effect, say it could form the heart of a new power source, in which it is used to drive fluids past electricity-generating turbines.

"According to Dr Eugene Podkletnov, who led the research, the discovery was accidental. It emerged during routine work on so-called 'superconductivity', the ability of some materials to lose their electrical resistance at very low temperatures.

"The team was carrying out tests on a rapidly spinning disc of superconducting ceramic suspended in the magnetic field of three electric coils, all enclosed in a low-temperature vessel called a cryostat.

"One of my friends came in and he was smoking his pipe,' Dr Podkletnov said. 'He put some smoke over the cryostat, and saw that the smoke was going to the ceiling all the time. It was amazing—we couldn't explain it.'

"Tests showed a small drop in the weight of objects placed over the device, as if it were shielding the object from the effects of [the Earth's] gravity—an effect deemed impossible by most scientists.

"We thought it might be a mistake,' Dr Podkletnov said, 'but we have taken every precaution.' Yet the bizarre effects persisted. The team found that even the air pressure vertically above the device dropped slightly, with the effects detectable directly above the device on every floor of the laboratory.

"In recent years, many so-called 'anti-gravity' devices have been put forward by both amateur and professional scientists, and all have been scorned by the establishment. What makes this latest claim different is that it has survived intense scrutiny by sceptical, independent experts, and has been accepted for

publication by the *Journal of Physics D: Applied Physics*, published by Britain's Institute of Physics.

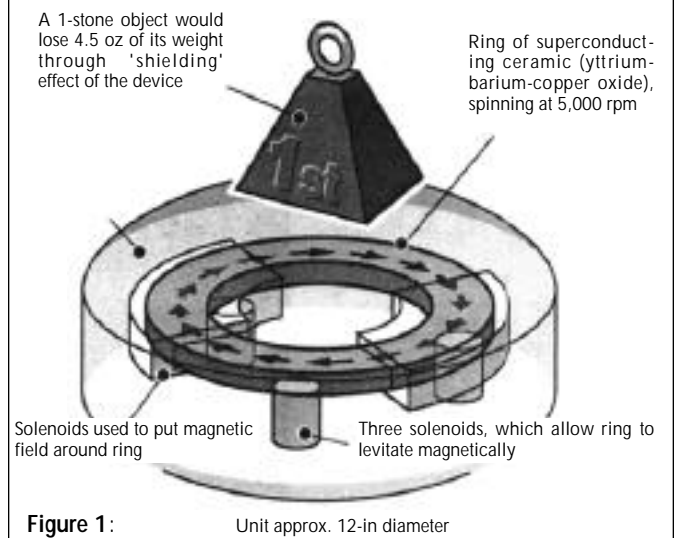
"Even so, most scientists will not feel comfortable with the idea of anti-gravity until other teams repeat the experiments. Some scientists suspect the anti-gravity effect is a long-sought side-effect of Einstein's general theory of relativity, by which spinning objects can distort gravity.

"Until now it was thought the effect would be far too small to measure in the laboratory. However, Dr Ming Li, a senior research scientist at the University of Alabama, said the atoms inside superconductors may magnify the effect enormously. Her research is funded by NASA's Marshall Space Flight Center at Huntsville, Alabama, and Whitt Brantley, the chief of Advanced Concepts office there, said, 'We're taking a look at it, because if we don't, we'll never know.'

"The Finnish team is already expanding its programme, to see if it can amplify the anti-gravity effect. In its latest experiments, the team has measured a two per cent drop in the weight of objects suspended over the device—and double that if one device is suspended over another.

"If the team can increase the effect substantially, the commercial implications are enormous."

HOW THE ANTI-GRAVITY DEVICE WORKS



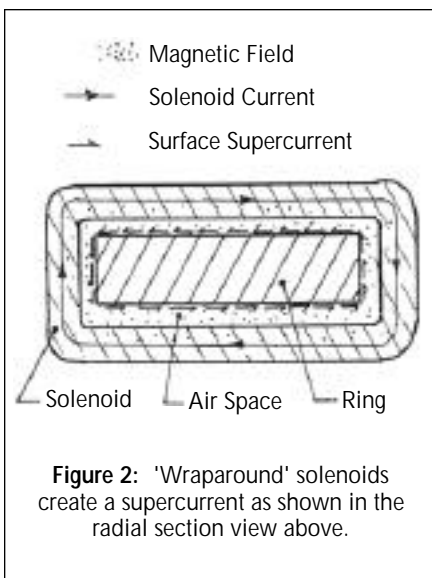
DESCRIPTION OF EXPERIMENTAL APPARATUS

The Internet version includes a diagram (which was presumably published by the *Sunday Telegraph*) of the apparatus used in this experiment. The diagram shows a ring-shaped ceramic superconductor spinning at 5,000 rpm about a vertical axis of rotation (see Figure 1). This ring is about 8 inches (200 mm) in diameter on its outside, and possibly 5/16th inch (8 mm) thick. Three solenoids are positioned under the ring and produce a magnetic force which supports its weight (levitates the ring). The same solenoids were probably used to levitate and spin up the ring before it became superconducting. More on this later.

Another two solenoids seem to wrap around the ring. They were "used to put magnetic field around the ring". Since the discovery was accidental, we infer that this apparatus was designed for a different purpose. We need to speculate on the original purpose of these experiments in order to appreciate better exactly what electromagnetic effects were being produced that might have led to the gravitational effect.

CURRENT RESEARCH ON SUPERCONDUCTORS

Superconductors are a technical innovation with tremendous commercial potential; hence the huge research effort by many scientists. Much of this work is directed at overcoming two problems that stand in the way of this commercial application. One is that the temperatures have to be very low. Until recently, a few degrees above absolute zero were needed



to create superconductivity. In recent years, a class of materials was found which became superconducting at tens of degrees absolute—a tremendous improvement, but not quite enough.

The second problem relates to the amount of current which a superconductor can carry. When a material becomes superconducting, a strange thing happens: all external magnetic fields are expelled from the body of the material. If we cause a current to flow in a superconducting wire, only the outer surface of the wire will carry current; the bulk of the wire does not participate at all. This means that the supercurrent is extremely intense, and a point is quickly reached where this current intensity destroys the superconducting condition.

From the nature of the apparatus given in Figure 1, it seems that the experimenters were testing the ceramic material for its ability to sustain a certain current intensity. The gravitational effect might therefore have been due to the three levitating solenoids, or the two 'wraparound' solenoids, or the start-up procedure, or a combination of any or all these things.

ANOMALOUS OBSERVATIONS

Before looking at these processes in more detail, let us consider exactly what was observed. The outside of the cryostat was probably cold due to imperfect insulation, and the air in contact with it would have been cooled, too, and descended towards the floor. When the visitor made some of this air visible with smoke, the scientists were surprised to see the air rising towards the ceiling. Being a little warmer than the surrounding air, the smoke rose, but near the cryostat the cooling effect of the apparatus predominated. The experimenters were no doubt surprised to see the descending air, as revealed by the smoke.

They measured the pressure of the atmosphere above the device and found it to be a little lower. We are not told how much change was measured, but a pressure reduction was also obtained on other floors of the laboratory, directly above the device. This tells us the effect had a long range.

The effect of a bar magnet drops off as the cube of distance, i.e., very rapidly. If we had placed a 12-inch-long bar magnet where the device was, its effect on the next floor would have been only 1/500th of the effect near the magnet. Natural gravitational fields fall off with the square of distance, i.e., not so rapidly. The field around

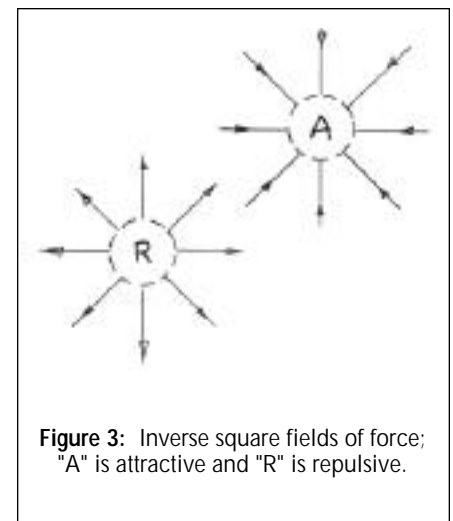
a single electric charge behaves the same way. If a 12-inch sphere had been charged up, the effect of its field on the next floor would have been about 1/60th of the effect near the sphere.

The Finnish experimenters will no doubt have determined how the influence drops off with distance, both vertically and horizontally, but they have not said. We might assume that it either falls off as the inverse square, like natural gravity, or as the inverse distance, as with radio waves emanating from an antenna. Had the drop-off been more rapid, it would have been quite difficult to measure over a distance of several floors.

The experimenters also suspended an object from a weighing device and observed a 2% reduction in its weight. To eliminate non-gravitational effects, this object would have been a non-magnetic metal like copper, lead or aluminium. They would have earthed the device and the weight to eliminate electric forces, and measured the weight with a device like a spring balance which does not depend on gravity for its action.

The last item of information is that when two devices were stacked one above the other, the weight reduction was doubled. This tells us that this influence is linear and allows us to predict that by either intensifying the action, or by stacking up devices, or both, any degree of gravitational effect will ultimately be achievable.

Nothing was said about the effect below the apparatus. Was there an effect there also? Was it to reduce weight or increase it? The fact that nothing was said would seem to imply that below the device there was also a weight reduction, and that it



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diminished with distance in much the same way as above. But we don't really know. The experimenters might have wanted to keep something up their sleeves, too.

THE LIKELY EXPERIMENTAL PROCEDURE

Let us now consider the electromagnetic events of this experiment. First the ring is cooled down to near its superconducting temperature. I don't know much about the electrical properties of the ring material, but will assume here that it was able to conduct electricity, like metals do, before it became superconducting. If that was not the case, then the superconducting material would have been applied as a thin layer over a metal ring such as iron, and the metal would have been used to levitate and spin up the ring before the superconducting condition took over.

Ordinary conductivity is needed for the three levitating solenoids to lift and spin up the ring. This action is just like what happens in an ordinary AC induction motor—the type invented by Tesla. One-hundred cycle, three-phase power might have been used to do this. When excited by three-phase power, the solenoids produce the same effect as a pair of vertical bar magnets rotating under the ring at 6,000 rpm. Because of the electrical resistance in the ring, a kind of electrical friction is produced which drags the ring around with them. At the same time, the ring is repelled upwards and levitated.

As the ring is brought up to speed, it probably cools more rapidly due to gas turbulence. At 5,000 rpm it becomes superconducting. When this happens, the frictional effect disappears but the levitating effect remains. The three-phase AC can now be switched off and replaced by an equivalent DC current in all three solenoids to maintain levitation.

With the ring up to speed and superconducting, it is time to perform the current-intensity measurement. At this stage the disc is slowing down due to friction from the gas inside the cryostat, which is probably helium. This could take minutes, and hence allow ample time for the gravitational effect to be observed. During this phase, the two wraparound coils are energised with either AC or DC, probably DC. The entire ring is enfolded by this effect, and the field tends to centre the superconducting ring in the solenoid. Thus it can also be used to levitate the ring, and current to the three solenoids can be switched off alto-

gether. Figure 2 shows the current flow pattern in the ring that is associated with these coils.

REPLICATING THE EXPERIMENT

The purpose of the above examination of this experiment is not only to understand what might have happened, but to help any interested researcher to repeat the experiment. Although the original experiment was performed with a superconductor, it is not immediately obvious that this feature is essential. Certainly, similar current flow patterns can be produced in ordinary conductors. Thus, since the superconductor may be hard to obtain, at least some meaningful work can be done without it.

It is entirely possible that the superconducting property is an essential ingredient of the gravitational effect—and not just any superconductor but particular ones, such as the materials used by the Finnish team. If that is the case, then they have the field very much to themselves at this time. They may not even know exactly what it takes to produce the gravitational effect—only that their apparatus is somehow doing it.

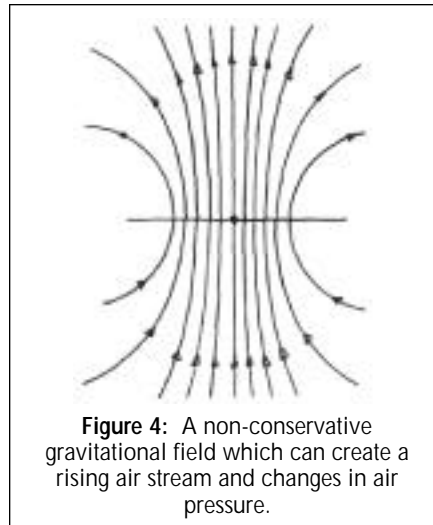


Figure 4: A non-conservative gravitational field which can create a rising air stream and changes in air pressure.

When the promised paper appears, we will know more about what may be required to produce a gravitational effect. I have checked copies of this publication up to November 1996 but have found no reference to this work. This is not unusual. It could take the Finns a year to satisfy the reviewers and examiners of this publication that their work is genuine, and put their report into a form acceptable to its editors.

Knowing what we know about 'the cover-up', our concern is that if the discovery is genuine, the report of the Finnish team may never appear in print at all.

NATURE OF THE GRAVITATIONAL FIELD OBTAINED

There is enough information in the *Sunday Telegraph* report to allow us to say something about the kind of field of influence which the Finnish team observed. Figure 3 shows a natural inverse square attractive field, and an inverse square repulsive field. So far, the latter field has not been observed.

If the experiment had produced an inverse square repulsive field, there would have been a weight loss above the device, a weight increase below it, and a reduction in air pressure near it. However, no air movement would have been produced because all changes in weight would have been balanced exactly by the change in pressure. Such a field would be called "conservative". In a conservative field, an object taken around any path in this field, but brought back to its starting point, would neither lose energy to the field nor gain any energy from it. The experimenters made a point of saying that the air above the device was constantly rising. This means that the field was not conservative.

Figure 4 shows a field which can produce a pressure reduction as well as air movement. This is just the kind of field that various researchers have postulated as required to explain the behaviour of UFOs (see, for example, Aimé Michel's *The Truth About Flying Saucers*, p. 211). To interpret the field, the reader need only assume that, at each point, the force on any object there acts along the local field line in the direction given by the arrows; and that the more crowded the lines, the stronger the force.

In Figure 4 there is a weight reduction above and below the apparatus, and the apparatus itself should show the greatest reduction. Around the apparatus the effect is mostly vertical and fairly uniform—an ideal propulsion field.

There is talk in the article about generating energy by harnessing the weight-loss effect. This is entirely possible in the field of Figure 5, but the energy may not be free. This energy may have to come from the spinning disc or the solenoids. Until we have proof to the contrary, it is unwise to assume that just because the field is not conservative, energy is therefore not conserved in the overall action of the field. Magnetic induction fields are not conservative either, but energy is certainly conserved in their action. We have here an experiment based almost wholly on magnetic induction. To find a non-conservative

gravitational field is not that surprising, but to find that energy was not conserved would really be new.

POSSIBLE APPLICATION TO POWER GENERATION

A 2% reduction in weight is quite enough for producing substantial amounts of power. In the laboratory, air was rising over the apparatus, spreading horizontally at the ceiling, and descending at a distance from the axis of the spinning disc. If a pipe filled with, say, water, were made to trace out that path, it would move just like the air, and a turbine could extract energy from the flow.

An even simpler solution is to make a large wheel with a heavy rim and position it with its axis horizontal so that one side of its rim is just above the device, while the other side is as far away as possible (see Figure 5). The wheel could be placed inside an evacuated container to reduce air friction. If the rim of this wheel weighed 1,000 kg and moved with a speed of 500 m/s (the kinds of speeds we have in gas turbines), a 2% reduction in the weight of the rim would generate 100,000 watts of power—about the output of a medium-sized car engine at full throttle.

Elsewhere in this article it was noted that this energy had to be coming from somewhere, most probably the spinning superconductor disc or the solenoids, or all of them. In this case, the energy would be no use as a source of primary power.

However, there are significant engineering applications even then. Firstly, if the wheel motion is reversed and it is driven, we are then pumping energy into the device. This could be one way of intensifying the field, or of maintaining it in ways

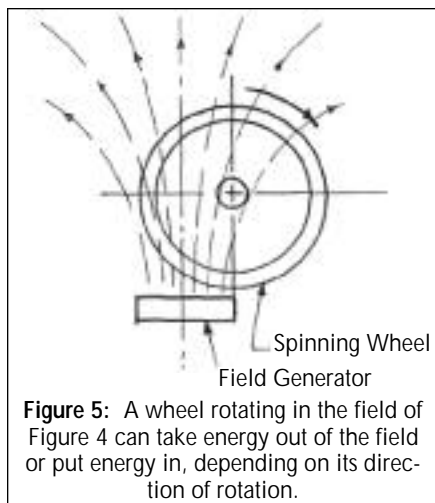


Figure 5: A wheel rotating in the field of Figure 4 can take energy out of the field or put energy in, depending on its direction of rotation.

that might be more convenient or more efficient than the various electrical inputs.

The device could also be a mechanical transformer. One wheel could pump energy in, while another could take it out. The two wheels could be running at different speeds, giving the effect of a gearbox—possibly one that is near 100% efficient.

At this stage we don't really know what the effect might be of pumping energy in. Since one possible effect is to intensify the field, one would expect the experimenters to waste no time in conducting some spinning-wheel tests, especially since they are relatively easy to do.

EXTRATERRESTRIAL SOURCES ON ARTIFICIAL GRAVITY

Gravitational propulsion is dealt with in the UFO literature, but two sources which I believe all researchers should keep in mind are those from George Hunt Williamson and Daniel Fry.

On page 83 of *The Saucers Speak*, Williamson conveys the following message given by ETs on 19 September 1952:

"The four great primary forces are: static magnetic field; electrostatic field; electromagnetic wave; resonating electromagnetic field. Your scientists do not understand the last one mentioned."

On page 51 of *The White Sands Incident*, Fry quotes his ET contact as saying on 4 July 1950:

"You are familiar enough with electro-dynamics to know that a moving electron creates a magnetic field. The tremendous surge of electrons through the force-rings produces a very strong magnetic field. Since the direction and amplitude of flow can be controlled through either ring, and in several paths through a 'single' ring, we can produce a field which oscillates in a pattern of precisely controlled modes. In this way we can create magnetic resonance between the two rings, or between several segments of a single ring.

"As you also know, any magnetic field which is changing in intensity will create an electric field which, at any given instant, is equal in amplitude [this should perhaps read "phase". Auth.], opposite in sign, and perpendicular to the magnetic field. If the two fields become mutually resonant, a vector force will be generated. The effect is similar to, and in effect identical with, a gravitational field. If the center of the field coincides with the craft's center of gravity, its only effect will be to increase the inertia or mass of the craft.

"If the center of gravity does not coincide with the center of force, the craft will begin to accelerate towards that center. Since the system which creates the field is part of the ship, it will of course move with the ship, and without interruption it will continue to generate a field whose center of attraction is just ahead of the ship's center of gravity, so the ship will continue to accelerate as long as the field is generated.

"Note that this system does not involve 'free energy' or what your people refer to as perpetual motion...

"To slow or stop the craft, the controls are adjusted so that the field is generated just behind the center of gravity so that negative acceleration will result."

By the time these messages were given, government authorities already had in their possession crashed UFOs and the means to discover their method of propulsion. This information was being denied to the general public and the scientific community. The ETs, as they often do, were evening the scales a little in our favour. Unfortunately, UFO researchers and the scientific and technical communities were just too blind and deaf to benefit from this effort. It is not too late yet: they might still redeem themselves. The Finnish discovery is just the latest in a series of 'nudges' which could turn them around.

WHY DID THE FINNISH TEAM ISSUE A PRESS RELEASE?

The researchers at Tampere University had already spoken to British scientists by the time they gave this press release. They could have had several reasons for issuing this press release:

- The experiment is relatively easy to duplicate in various other superconductivity laboratories around the world, and they wanted to secure their priority.
- Negotiations with other scientists were breaking down and publication in a suitable scientific journal was becoming doubtful.
- The cover-up merchants were moving in and they saw a press release as a way to keep the discovery in the public domain.
- They might have suspected or known that secret gravity research has already progressed way past this point, and the best use of their discovery was to bring it into the public domain.

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